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Introducing a Strategic Information Systems Planning Meta-Method for Cooperative Inter-Organization Relationships

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Abstract — **Strategic Information Systems Planning (SISP) and aligning IT with business has been in a key focus of IS managers for decades already. Constant changes in business environment and developments in technologies are hardly making the effort any easier. Characteristic for available SISP-methods is their focus on a single organization. However, in current network economy the role of inter-organizational systems is increasing creating a need for Inter-Organizational Strategic Information Systems Planning (IOSISP). In this paper a general requirements for such are sought and presented in a form of meta-method.**

Keywords — **Strategic Information Systems Planning, Inter-Organizational Relationships, Cooperation, Inter-Organizational Information Systems.**

I. INTRODUCTION

In today's turbulent and increasingly complex economy businesses need tools for handling information flows efficiently and effectively. Organizations use information for various functions such as planning, controlling, organizing, and decision-making. Information, therefore, is unquestionably a critical resource in the operations of all organizations [1].

Strategic Information Systems Planning (SISP) has been developed to aid in recognizing appropriate portfolio of computer-based application and relevant information processing activities to support organizations' information needs [2]–[4]. SISP is not a single solution or method for IS-planning but an umbrella term for host of methods and techniques that are more or less based on different paradigms of world, organizations, and humans.

Characteristic for available SISP-methods is their focus on a single organization [5]. However, recent changes in business environment highlight the role and importance of Inter-Organizational Relationships (IOR) and business networks for competitiveness [6]–[9]. Cooperative networks, long-term partnerships and strategic alliances place challenges for efficient and effective organization of joint efforts. Information, communication, and relevant technologies have a crucial role in this effort.

Inter-Organizational Information Systems (IOSs) are developed to help organizations to communicate and cooperate better with each other's. IOSs can contribute companies' competitiveness, and are thus strategic from nature [10]. However, adoption of an IOS is not a simple task because of the number of stakeholders involved [11], [12]. This implies that information systems development in business networks should be planned carefully. Because of the impact of IOSs to processes of multiple organizations the planning process should be inter- rather than intra-organizational [13].

Many SISP-methods have been developed, mainly for use of big corporations, but literature on Inter-Organizational Strategic Information Systems Planning (IOSISP) is only emerging (see for example [13], [14], [5]). SISP in cooperative business networks focuses on to identify application portfolio, that of IOSs, with a high potential impact. Studying general requirements of IOSISP is important to further theory and practice but has not been done previously. In this paper, requirements for SISP in cooperative business networks are searched.

The real life problem and the research question is: How to *improve* SISP in cooperative Inter-Organizational Relationships (IOR)? Currently ad hoc methods are mainly used in cooperative IOR environment or traditional methods are applied to network context as no systematic SISP method has been introduced for cooperative IORs. The purpose of this study is not to directly create one but to find out general requirements for such a method. Thus, the result of this study is a meta-method to guide the development or selection of IOSISP – Inter-Organizations Strategic Information Systems Planning – method.

From two main alternatives, empirical studies and theoretical development, the latter one is selected in this study. Drawing from literature of three most important subject areas, SISP, IOS and IOR [15], a meta-method is theoretically developed using conceptual analytical research approach based on design science paradigm [16]–[18].

The rest of the paper is dived to sections as follows. In Section 2 previous literature on SISP-methods is reviewed and evaluated as it lays the groundwork for development of IOSISP. Development of IOSISP requires understanding of the special features and requirements that multiple organizations place for successful SISP-processes. Business

networks and their distinct features are examined in Section 3. In Section 4 the IOSs are considered and their role in IORs. Drawing from these three knowledge areas a new meta-method for SISP in cooperative business networks is introduced in Section 5. An inherent part of any design science study is the evaluation of the research product. Thus, the developed meta-method is evaluated against a best challenger in Section 6. Section 7 concludes the effort with discussion.

II. STRATEGIC INFORMATION SYSTEMS PLANNING

Improved strategic information systems planning is and has been one of the most critical issues facing information systems executives for over three decades already [19]–[23]. SISP has huge potential to make contribution to businesses and other organizations [2]. With the advent of new technologies, such as Internet, the challenge of aligning IS with business is perhaps more significant and more difficult than ever [23], [24]. On the one hand, effective SISP can help organizations use information systems to reach business goals [25]. On the other hand, SISP can also enable organizations to use information systems to significantly impact their strategies [26].

Former of these approaches attempts to "align" MIS objectives with organizational goals and the latter to "impact" organizational strategies [27]. These two views are somewhat different, and usually only other will be used. When the driver of SISP is Business (Business→IT), risk arises that application portfolio is designed to support current business processes and full potential of IT is not discovered. On the other hand, if the driver of SISP is an advance in IT (IT→Business) risk arises to fulsomely invest to unprofitable applications. Balanced approach (Business←→IT) suggests that business opportunities and advanced IT technologies are considered together to enable innovative but also realizable plans.

In today's turbulent and complex business environment achieving IS planning success has become more critical but also more difficult. Many experienced IS planners and researchers have considered that comprehensive IS planning costs too much and takes too long time in current turbulent environment and have hopefully viewed incremental IS planning as a potential, reasonable alternative. This has led much of the IS-strategy research to concentrating on contemporary technologies and strategies (or even business models), accelerated by rapid emergence of e-Business research and practice. This development of research and practice might be shortsighted, as some studies have founded that more extensive IS planning produce better results also in turbulent environment [28], [29]. However, different researches give mixed [30], [31] or even opposite results [32].

Planning success has been argued to be tied to approach selected for planning. Some approaches are more successful in certain environments, but also general tendencies have been found. For example, studies have suggested that formal comprehensive methodologies such as BSP, Information Engineering, and Strategic Data Planning are too rigid and many times too complex to be successfully implemented [33]. More over, studies suggest that planning based on learning and evolution is more successful. Earl studied planning processes and found that "organizational" approach seems to be most successful. Planning as a structured process of learning builds in a level of flexibility and adaptability while maintaining coordination and control [3], thus solving the problem of being flexible/adaptive and comprehensive at the same time. Segars and Grover got similar results for their "learning" school of strategic IS-planning approach [33]. In addition, these findings are in line with prescriptions of successful strategy making in the emerging era of hypercompetition of Hart and Banbury [34].

A. SISP claims

In an earlier conceptual-analytical study based on existing literature it was found that comprehensive (yet flexible) SISP methods have still an important role in IS-planning [35]. SISP analysis produces greater knowledge to support strategic planning and can result in greater top management commitment and likelihood for implementation [30], [36]. However, instead of long-lasting and heavy bureaucratic planning process SISP processes have to become more flexible and nimble and to take an advantage of using multiple alternative methods and exploiting expertise of different stakeholders. Future SISP-processes should be more flexible, dynamic and participative learning processes of different stakeholders.

The connection to business planning should also be visible and active, as new technological solutions make it possible to create and implement new business models and organizational structures and many new management innovations [37] require sophisticated information systems for operationalization. Today, information systems development and business development goes more and more hand in hand.

The SISP claims can now be formulated as follows:

SISP-1: Selection of planning approach should be done according to qualities of business environment and management culture of the target network. Some approaches provide better results in certain environments and cultures, but overall most successful approach seems to be learning-organizational-evolutionary approach.

SISP-2: IT and Business alignment is perhaps the most discussed issue of successful SISP. Balanced approach to planning should be applied, as IT provides little value in itself. The real benefits lie in business change that IT enables.

III. COOPERATIVE BUSINESS NETWORKS

Today's business environment is increasingly characterized by fierce competition, dynamic and fast

changing markets and global distribution of work. These changes in competitive environment has led companies to ever more concentrating on few core processes and developing their own core competencies [38] while outsourcing other processes where reasonable, as current management dogma propose.

This development goes a way back to writings of Smith [39] on division of labor, a subject perhaps first initiated by Plato [40]. The Smith's [39] main point was that an individual's productivity increases if the individual specializes in a particular productive activity and that increase in specialization and productivity increases the total volume of the markets. This notion is applied to organizations in the notion of core competencies [38]. When a company concentrates on its core competencies its productivity increases making products and services cheaper and to available for wider audience.

Many times concentration on core competencies goes hand in hand with outsourcing non-core activities for companies specialized in activities in question, e.g. cleaning, work-place eating services, security, IT and even some support processes attached to core processes. In addition to purely economic reasons of more cost effective total production suggested by Transaction Cost Economics [41], [42], specialization and outsourcing have other motives as well.

In contrast to the transaction costs logic, which emphasizes cost minimization, the resource-based rationale emphasizes value maximization [43]. Companies try to specialize and to develop their distinct resources to create strategic advantage [44]. For non-distinct resources firms are more likely to rely on the market, if efficient market exchange is possible, Strategic alliances are seen as a strategy used to access other firms' resources, for the purpose of garnering otherwise unavailable competitive advantages and values to the firm.

Knowledge resources are common motive for strategic alliances. Others cannot easily copy or imitate knowledge-based resources, because they are vague and ambiguous [43]. Sometimes the question is not just to get access to partners existing knowledge base but to cooperate to co-create new knowledge or capability as in knowledge based theory of the firm [45].

Nevertheless the current popularity of outsourcing, distribution of work between companies has also some limits. Specialization and outsourcing inherently pose a need for managing the inter-organizational relationships and to cooperate with outsourcing partners. Aulin-Ahmavaara's [46] 'The Law of Requisite Hierarchy' explains with mathematical precision why cooperation is required in inter-organizational relationships. The equilibrium of distribution of work between companies depends largely on complexity and novelty of inter-related tasks. Simple tasks are much easier to manage across companies than complex tasks.

The Law of Requisite Hierarchy suggests that when some task is distributed for number of actors, uncertainty appears which will reduce the efficiency and effectiveness of the actors. To compensate this uncertainty, some control is needed, managed cooperation of different actors.

The equilibrium of reasonable level of distribution of work between companies (that of specialization and outsourcing) can be seen to increase in the course of time as new methods are developed to compensate appeared uncertainty. These methods can be, for example, standardization of components or modules or interfaces, more efficient and effective organizational and network structures and operational modes, as well as new information and communication technology and systems supporting cooperation of different actors. However, some of these and other factors can also have opposite effect on equilibrium suggesting companies to insource some tasks.

Inter-firm cooperation is not only required but also has also an influence on the way companies' competitiveness is formulated. Conventional strategic thinking has focused on individual firms as the competitive unit in any industry [47]. However, in today's networked business environment competition is moving from individual companies to networks of businesses [6], [7]. As a result, efficiency seeking has exceeded the company's borders to consider the efficiency of the whole business network. Creating close collaboration and integrating whole value chain in a way, that brings unique value for customers, can be source for sustainable competitive advantage [48]. Thus, collaboration can be seen as the key to value creation [7].

A. Business network claims

In an earlier conceptual-analytical study based on existing literature it was argued that cooperative inter-organizational relationships are of necessity in current business environment promoting specialization (concentration on core competencies) and outsourcing [49]. This distribution of work causes a need for managing the cooperation of different performers efficiently and effectively. Modern information systems offer plenty of opportunities to enhance the cooperative relationships. On the other hand, information systems also enable companies to better manage the drawbacks of extensive distribution of work, increasing the possibilities of outsourcing ever further.

However, it was also noted [49] that it is not worthwhile to develop and invest in equally to every relationship but to identify certain groups of relationship of different importance and develop each group accordingly. Between markets and hierarchies, three levels of cooperation were described according to complexity and novelty of tasks involved: communication, coordination and collaboration. Each of these levels requires different kind of approach not only for cooperative strategy but also for inter-organizational information systems used in a relationship. In certain relationships it is enough to enhance operations by communicating stock levels, production timetables and demand forecasts where as in other relationships synchronizing production is required or solutions that

support collaboration in new product development context.

From these we get the Cooperative Business Network claims:

CBN-1: It is worthwhile to divide the entire business network to smaller sub-networks with special development focus. It is not reasonable to draw all business partners with highly different development interests beside the same table but to select participant with similar development challenges and interests.

CBN-2: Many new inter-organizational business models are only manageable because of developments in ICT. As IOSs enable new organizational and inter-organizational forms, IT-strategy should be planned parallel with network planning to find out possibilities and opportunities that technology can offer.

IV. Inter-Organizational Information Systems

Engagement in Inter-Organizational Relationships (IOR) has a deep effect to many aspects of organizational life. One of the most important subjects for development of cooperation is to ensure fluent information flows between cooperating partners. Modern information and communication technologies (ICT) have a great influence how these information flows are shaped and handled today. Hong [50] even argues, that 'there is a shift in the role of IT - from a competition weapon to a cooperation enabler among businesses'.

The Internet and related Information and Communication Technologies (ICT) have enabled the cost-effective dissemination of information [51]. According to [52] "all types of inter-organizational systems are increasing in number as business processes are modified so that organizations can respond to new opportunities as well as to the constant pressures for greater responsiveness to the needs of customers and trading partners". IOS can help to improve performance e.g. by lowering transaction costs [53]. Also, the strategic value of Inter-Organizational Systems (IOS) has been well recognized [54]. The context in which IOS is implemented is important as it has been argued that 'real benefits reside not within the IT domain but instead in the changes in the organizational activities that the IT system has enabled' [55].

The IOS projects differ from conventional Information Systems (IS) projects focused on single company, as in those cases legal boundaries of a company is not penetrated. In contrast to inter-organizational systems, traditional intra-organizational systems have two characteristics that facilitate their management [56]:

1. One organization can always fully control the information system
2. The cost caused by the information system can always be addressed to one single organization, so can the benefits they create

IOSs are central for the development of business networks by reducing costs and extending the possibilities for communication, coordination and collaboration and by linking technologies and sources of knowledge to support innovations [57]. As Suomi [58] noted: 'In one word, the world of IOSs will be that of cooperation'. IOSs are needed to enhance the ever growing needs of inter-organizational cooperation. On the other hand, IOSs are also accelerating this development by offering opportunities for redesigning of cooperative networks and to outperform.

Johnston and Vitale [59] studied how inter-organizational systems could also help in creating competitive advantage and created a set of categories to guide exploration. They concluded that inter-organizational systems were an avenue to cooperation on a widening range of initiatives that improved the economic performance of each partner. Thus, inter-organizational systems are not only a mean to achieve objectives of cooperation but also a facilitator of cooperation as they 'necessitate some kind of cooperation because they are technologically and financially demanding projects' [53].

Contribution to partner development is partly due to the fact that building IOSs require ex ante investments binding partners to each others. The process of implementing and using IOS seems to imply a process of partners deliberately entering into situation where they become dependent on each other [8]. This situation reduces the possibility of partners to behave opportunistically and thus, IOSs as a "mutual hostage" increase trust [35].

A. IOS claims

A conceptual-analytical study based on existing literature of IOS success factors found that there are six kinds of factors influencing to success of IOS [60]:

1. environmental forces,
2. technological issues,
3. rational-economic issues,
4. socio-political issues,
5. knowledge issues, and
6. interrupting factors.

These factors follow two theoretical classification schemes. First, we have commonly held principle of division of labor to internal and external level applied to network context. Thus, we have external (influencing from outside the network) factors (1) and internal (influencing in inside the network) factors (2-5). Internal factors follow division to four main resources of an organization that correspond to four main functions of an organization: acquisition, upkeep and development of machines (2), finance (3), personnel (4), and information resources (5) [61]. In addition, we have one more factor (6) that can influence the results even the agreements and plans would have been successfully. Risks of an IOS implementation project can be anticipated in some extent with, for example, using scenario method. However, these issues are something that is out of the range of planning and agreements, they just have to be prepared for and managed if they emerge.

The characteristics of IOSs require these factors to be

considered when planning for an IOS adoption. In addition, as companies engage to interaction with each other, their knowledge and perception of IOSs will change [62]. To promote more dynamic and rich picture of IOS adoption the interplay between different factors and actors should also be considered [60].

Thus we get the IOS claims:

IOS-1: Changes in business environment should be analyzed to be able to evaluate competitive factors and to identify possible threats and opportunities.

IOS-2: Available technological solutions should be compared to existing IT-infrastructure to identify weaknesses and strengths of current IT-infrastructure (e.g. heterogeneity of IT-platforms) and threats and opportunities of available technologies.

IOS-3: The expected benefits should be planned before hand, as it is difficult to reach goals that are not identified. IOSs are never an answer in themselves; they are at best a catalyst and an enabler [63].

IOS-4: Establishing relationships on trust and mutual understanding is even more important in inter-organizational context that in intra-organizational, as formal authority might not exist to bring the changes.

IOS-5: Different organizations and different participants might have different levels of IT-skills, knowledge and maturity to use IT. Planning process should be organized as learning process so that those with weaker skills and lesser knowledge on IT-issues can learn to understand the benefits and challenges of cooperative systems.

IOS-6: Assessing risks and potential sources of failure is important before proceeding with implementation. If there are substantial risks in sight companies might not want to proceed, unless there are compelling pressures or enormous opportunities.

V. META-METHOD FOR SISP IN COOPERATIVE BUSINESS NETWORKS

Characteristic for SISP in business networks is presence of multiple stakeholders with varying levels of power and interest. This environment introduces some direct qualities that give network-SISP a distinct flavor. Basically, companies may choose to apply some existing SISP-methodology or to use more informal approach, but in either case it should follow the above mentioned principles.

These principles work also as a meta-method for IOSISP. This meta-method, illustrated in Figure 1, can help managers to develop their own SISP approach, customize some existing method or straightforwardly apply one. The difference with presented meta-method and the actual methods is that meta-method only suggests that these kinds of issues should be considered, it does not make a stance how or who should handled these issues in practice.

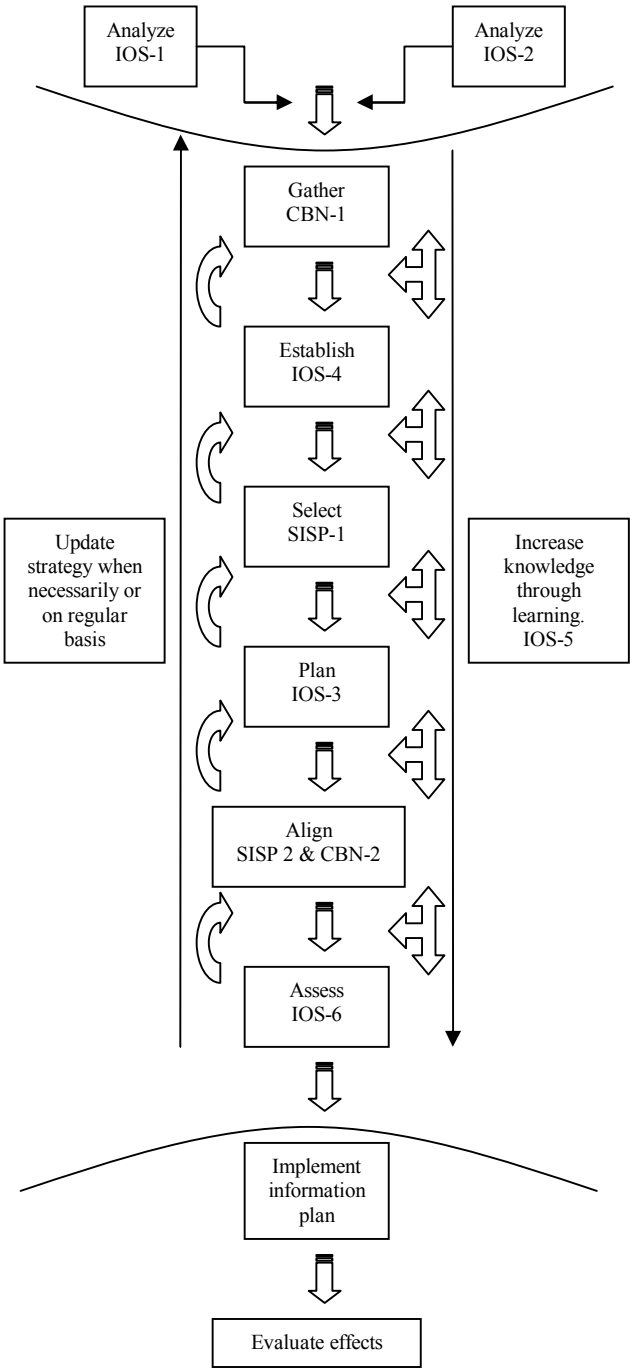

Figure 1. Mapping the principles to SISP-process.

In figure 1, the principles are organized in a rather linear manner, starting from analysis and ending up with assessment of risks, after which follows the implementation and the following phases. In reality the different principles might be followed in parallel and developed in evolutionary fashion. Thus, the meta-method should not be considered guiding the order of suggested issues; rather it illustrates one possible order with many back-switches, loops, and iterative processes.

In figure 1, there are two analysis placed on top of the figure. Analyzing the changes in business environment and competitive factors is important to recognize opportunities and threats (IOS-1). Stakeholder analysis is also worthwhile to conduct not only to find out different points of departure for each participant but also to discover potential external stakeholders. Sometimes these external players might have a lot to say when planning different ways to cooperate and to use IOSs. These external stakeholders can be, for example, governmental institutions, industrial bodies, trade unions and alike. Or just enough big buyer/seller in the markets who sees that sort of development to be harmful for them self.

Second analysis considers the developments is ICT, as many times new ICT-innovations opens up new possibilities also for management innovations. Also, when planning for adoption of IOSs, different partners' existing IT-platforms should be considered as planned solutions should be reasonable without exhausting renewing of other organizational information systems. Rarely everything can be planned for "greenfield site" but we have to develop from where we are [64]. Usually new IOSs are built upon existing heterogeneous system architecture of different partners.

These two analyzes can give suggestions if certain network should proceed or not to proceed with IOSISP. If there doesn't exist any threats or opportunities in business or ICT or at least they are not identified, it might be difficult to justify need for planning process, especially if there is rush to meet customer demand. If, as it could be expected, there can be found threats and opportunities, companies have clear reason to start examining the possibilities for development.

Third, as CBN-1 suggests, selection of participants should always follow the tasks in hand; it is not worthwhile to draw all companies in business network into a same planning table. Rather, grouping companies to several groups or sub-networks is a good idea and then proceed with each group in cooperation and SISP planning as appropriate. This grouping can be based on one single company's view of the situation or can be done jointly with key partners.

Next issue (IOS-4) considers the establishment of relationships between different companies. Many times IOS planning can also help in establishing cooperative relationships in the first place [13]. This issue is also about equality of different partners, or actually inequality of them. Different partners have different levels of authority and power, never minding the source of it (e.g. knowledge, size, position). Critical for successful IOS planning is not the possessing of power itself but the use of it. Balancing the use of this power is important, as rarely the power is absolute and undue use of it can result in rejection of other partners.

Finnegan et al. [13] argue that IOSISP environments can be describe along a continuum, and are described as ranging from monarchist (a single strong organization) to club (no single organization holds much power over others). Significant power differences can give IOSISP a political nature. Thus, IOSISP can also be seen as a negotiation process. Personal relationships and mutual trust might contribute for turning this situation to collaborative joint effort.

Fifth, the nature of SISP-method should be flexible and nimble and to support multiple different methods to choose from. Not all companies and networks are similar and benefit from the same analysis and working methods. Selection of planning approach should be done according to qualities of business environment and management culture of the target network. A SISP framework should incite to carry on enough extensive and in-depth study for each situation. Studies have suggested that organizational-learning-evolutionary approach seems to be most successful approach to SISP [3], [33], [65]. In these approaches planning is a continuous decision making activity shared by the business and IS [13]. For example, a study in three different kind of networks revealed that, while little formal thought was given to planning process in any of the studied organizations, planning was nevertheless perceived to be an important aspect of the developments [13].

Sixth (IOS-3), benefits should be planned carefully and stated explicitly to ensure success and acceptance of a new information system. If it is not clear what effects these systems will have it is difficult to accrue commitment from different partners and may lead to failure of systems. Benefits can be various and argued differently. For example, some appreciate faster cycle times, or decreased communication costs where as others can highlight more accurate information or strategic importance of investment to partner network.

Seventh (SISP-2 and CBN-2), connection with business planning in network should be tight. Network's business strategy process can, of course, be done separately but it seems more feasible to consider both network strategy and IS strategy jointly as IS can contribute and is a major source of many business development innovations. This comes from the dual role of ISs as supporter and/or enabler of business models and processes. In addition, planning is often a negotiation tool used by IOS participants to establish inter-organizational arrangements, and not just to delineate systems products [13].

Eigth, paying attention to the fact that not all situations and factors can be anticipated, some mechanisms to manage surprises should be prepared. Assessing potential risks, their relative actualization probability and extent of damage can help network to anticipate and prevent negative outcomes. In any case some unanticipated interrupting factors will appear and how they are handled can determine the eventual success or failure of network-SISP. Some of the uncontrolled issues can include, just for an example, natural disasters, hostile competitor moves or bankrupt or take over of some key partner.

In addition (IOS-5), not all participants have equal

knowledge on IOSs, thus the whole SISP can be considered to be a learning process. This holds true also for learning about forms and levels of cooperation, in which each company seeks to be involved. Through interaction and communication participants learn other's positions, views and will and are able to "learn" how to best apply IOSs for benefit of business network.

Considering all the above requirements is needed to give full appreciation for network environment and its distinct features. It is not so important how the search for strategy is otherwise organized, as long as it is done efficiently and effectively. Some approaches suit better in some industries and for certain kind of companies. However, some methods seems more feasible than others, especially those with high focus on participation and learning [66] or those considering different value sets of different stakeholders [67].

Some common features for all SISP processes after initial planning is added to figure 1. These issues are added to highlight few important viewpoints and issues that might be sometimes forgotten. After implementation of plans the effects of change should be evaluated and followed. Also, the plan itself should not be freeze for too long time; rather it should be a living document that follows the changes in business, technology and network.

VI. Evaluation of the Meta-Method

Every new theoretical construct should be evaluated to assess its strengths and benefits [16]. There are two main alternatives for such evaluation: theoretical and/or empirical. In this study the meta-method is evaluated only theoretically and empirical evaluation is left for further studies. The theoretical evaluation is conducted by comparing the meta-method to the best challenger recognized from the existing literature.

As no competing meta-method, guidelines or prescriptions for IOSISP was found from SISP literature, the competitor had to be sought from other streams of literature. Three different alternatives were recognized for potential source of best challenger.

1. First, as *ad hoc* methods are mainly used in IS planning in inter-organizational settings, they are evident challenger for systematic methods. However, as they are ad hoc methods and cannot be systematically documented to having any specific features there are hardly any mean to compare and to evaluate the "goodness" of developed meta-method against them. We will have to satisfy to note that some studies have found that systematic methods provide better results [28].
2. Second, as traditional SISP methods are somewhat applied also to network contexts, they provide potential source of competitor. Some of these organizational SISP methods could operate well as such in a "monarchist" [13] network environments, in which IOSISP processes are rather extensions of single companies planning processes. Suitability of such methods can however be questioned in planning environments closer to "club" [13] environments, which is a focus in this study. In either case, it was considered that evaluating a meta-method developed for organizational context against meta-method developed for inter-organizational context using criteria of inter-organizational context would evidently do unjust for organizational meta-method.
3. Third, and most promising source of challenger is e-Business literature. However, the vast body of literature seems to be concentrating more on contemporary technologies and business models than actual strategic planning processes. Also, much of the literature is concentrating on business strategies using information systems, such as e-Shops, electronic auction systems, and B2B exchanges for use of commercial activity of single companies, rather than in cooperation of multiple organizations. A challenger coming from this stream of literature could be comparable, positing it is concentrating on cooperative planning.

From these three streams of literature a challenger was found from third group, as suspected. Finnegan et al. [13] developed guidelines for "Systems Planning in Business-to-Business Electronic Commerce Environments". Despite the misguiding concept of "Electronic Commerce [that] refers to retailing and the consumer sector as well as mass marketing" in their title, authors don't restrict their examination on commercial applications only, but to all cooperative systems as well. Thus, authors provide recommendations for IOS planning guidelines that are comparable to meta-method suggested in this study.

A. Describing the competing theory

Finnegan et al. [13] draw their guidelines from literature relating planning environments (monarchist vs. club) that authors found to be of significant determinant, to five IOSISP areas: 1) IOS planning processes, 2) Roles in IOS planning, 3) The business direction, 4) IOS and organizational activity, and 5) Systems planning. From these five areas authors draw nine general guidelines:

- F-1a. Guidelines need to enable individual organizations to investigate their positions in the network, and determine their role in the planning environments.
- F-1b. Facilitate design of IOS planning process for individual organizations, and at a network level, appropriate for their role in the planning environment.
- F-2. Delineate inter-organizational roles and assigning people to these consistent with planning environment.
- F-3. Co-ordinate network participants in an

effort to match business requirements with IOS infrastructure consistent with appropriate planning environments.

- F-4a. Determine the effects of IOS on organizational activity that recognizes the dependence of such considerations on IOS planning environments.
- F-4b. Proactively determine organizational changes that facilitate the considerations of external parties.
- F-4c. Aid inter-organizational planning for structural integration recognizing the substantive issue as being beyond systems and technology.
- F-5a. Cover data planning issues of ownership, sharing methods and editing rights.
- F-5b. Facilitate planning for systems and technology that is inclusive of all stakeholder needs. These should consider communication standards and protocols as well as integration with internal systems.

B. Comparison of competing theories

Finnegan et al. base their nine general guidelines on two different planning environments, according to which every participant adopts their role in planning and understand their relative position in the network. Authors see that relative positions and power determine how the planning process will eventually follow; those with much power will dictate the planning process. We acknowledge that different participants have different relative power and influence to each others. However, this relative position and power is not static as they assume, because of the dynamic interactions [62] and evolving nature of relationships as a result of learning [65].

One important source for power today is knowledge and absorptive capabilities. Relatively less powerful company can in fact strengthen its relative position due to increased knowledge and understanding of required development and thus capability to direct development to more desirable direction. Thus, we have to question this approach to base IOSISP to pre-determined roles and positions (F-1a), as freezing the power and position relationships before actual planning hinder the possibilities for re-engineering the network in truly innovative matter. This conception can be drawn from the principle of tight connection between network planning and IOS planning presented in this paper (SISP-2 & CBN-2). However, the difference between these two views seems to be of philosophical matter. Finnegan et al. [13] seem to implicitly base their proposal to political school of strategic (IS) management where as in this paper the point of view is based more on notion of cooperation and joint effort of organizational approach (SISP-1).

Proposal F-1b is similar to SISP-1, only the above mentioned philosophical viewpoint differs. Proposal F-2 is somewhat similar to IOS-4, except the semantic difference between roles and relationships. Proposal F-3 is directly comparable with SISP-2 and CBN-2. Proposal F-4a considers how IOS will affect intra-organizational processes, F-4b how company could better match their intra-organizational processes to partner needs and F-4c considers the need for structural integration of partners. Proposals F-4a-c considers the IOS effect on intra-organizational processes, which is not really considered in this paper. SISP-2 and CBN-2 suggest that I-O Business Process Re-engineering could be beneficial, but does not take account of intra-organizational changes. In this matter, Finnegan et al. [13] have more extensive method.

Proposal F-5a covers the data planning and ownership issues that have no counterpart in this new meta-method. The IS application portfolio in new method is a result of aligning IT changes with business changes (SISP-2 and CBN-2). It is implicitly assumed that issues of F-5a are covered during this effort. Proposal F-5b suggests that planning should be inclusive for the needs of all stakeholders. It has to be questioned if such a plan can be developed or realized. More often plan is compromise of different stakeholders. However, the fact of listening all stakeholders reminds of the principle IOS-4, to balance the use of power and to establish relationships on trust and mutual understanding.

As a summary, it was considered that Finnegan et al.'s [13] guidelines F-1a took wrong approach, and that F-1b and F-2 were weaker than SISP-1 and IOS-4. Proposal F-3 was directly comparable, but proposals F-4a-b are missing from new meta-method. Proposal F-4c, on the other hand, is somewhat similar to SISP-1 and CBN-2. Proposal F-5a was though to be implicitly but not explicitly covered in SISP-2 and CBN-2. This is strength of Finnegan et al.'s [13] paper. Proposal F-5b was seen partly weaker, partly similar to IOS-4. However, Finnegan et al. [13] did not consider several issues presented in this paper: IOS-1, IOS-2, IOS-3, IOS-5, IOS-6, SISP-1, and CBN-1. Thus, the meta-method presented in this paper is more extensive in whole. This suggests that selected approach to draw conclusions from three related subjects was a fruitful approach to provide fresh understanding of phenomenon and contributed the body of literature.

VII. CONCLUSIONS

Current business literature proposes that companies should concentrate on few core processes and development of their own core competencies [38] while outsourcing other processes where reasonable [68,69]. This development, in turn, has introduced the need for cooperative inter-organizational arrangements (e.g. [8,9]). In networked business environment also the IS-planning processes must be inter- rather than intra-organizational. Current IS planning approaches stop short of this [13]. This is not to say that IOS and IS planning have nothing in common. Rather, the new inter-organizational context of IS planning requires a rethinking of SISP guidelines to include an inter-organizational perspective [13]. In this

study these guidelines are sought and presented.

The relationship between organization-centric SISP an IOSISP is an important issue, though not extensively covered here. It is difficult if not impossible to start leading or even participating in sophisticated IOS development projects if intra-organizational IS infrastructure is still scattered. Participation in IOSISP can require concurrent development of internal IS-issues to meet the requirements of inter-organizational challenges. Connection between IOSISP and intra-SISP is a self-evident subject for future research. Also, elaboration on IOSISP meta-methods and eventually also with concrete methods is suggested.

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